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ABSTRACT

A self-report measure of procrastination tendencies was developed and tested by relating it to a behavioral measure of procrastination and to a self-report measure of general efficacy. A 72-item Likert scale was written and administered to 50 college juniors and seniors. A factor analysis of the results yielded two factors that formed the basis for reducing the scale to 35 items with a resulting reliability of 0.90. A comparison of scores on the 35 items to performance on a self-regulated performance task--the Voluntary Homework System (VHS), developed by B. W. Tuckman and T. L. Sexton in 1989--yielded a correlation of -0.54, while the 35-item scale correlated at -0.47 with scores on the General Self-Efficacy Scale of M. Scherer et al. (1982). The latter scale correlated at 0.29 with VHS scores. A subsequent factor analysis of scores of a sample of 183 subjects from the same population on the 35-item scale yielded a single-factor structure and a condensed scale of 16 items with a reliability of 0.86. This short scale was recommended for use as a means of detecting students who are likely to procrastinate on college requirements. The Procrastination Scale used is included. (SLD)

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Measuring Procrastination Attitudinally and Behaviorally*

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Running Head: *Procrastination Scale*

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ABSTRACT

The purpose of this study was to develop a self-report measure of procrastination tendencies, and test this measure by relating it to a behavioral measure of procrastination and to a self-report measure of general self-efficacy. A 72 item Likert Scale was written and administered to 50 college juniors and seniors. A factor analysis of the results yielded two factors which formed the basis for reducing the Scale to 35 items with a resulting reliability of .90. A comparison of scores on the 35 items to performance on a self-regulated performance task called Voluntary Homework System yielded a correlation of -.54, while the 35-item scale correlated at -.47 with scores on the General Self-Efficacy Test. (The latter correlated at .29 with VHS scores.) A subsequent factor analysis of scores on the 35-item scale by a sample of 183 Ss from the same population yielded a single-factor structure and a condensed scale of 16 items with a reliability of .86. This short scale was recommended for use as a means of detecting students who are likely to procrastinate on college requirements.

INTRODUCTION

Many of the tasks and enterprises that individuals undertake are done voluntarily, that is, under their own self-control or self-regulation. Tuckman and Sexton (1989a) have labeled acts which require that one exercise influence over one's own behavior, such as studying, dieting, or cleaning up after oneself, as *self-regulated performance.* These are important areas of performance, particularly in school, and fortunately people possess "self-directive capabilities that enable them to exercise some control over their thoughts, feelings, and actions by the consequences that they produce for themselves" (Bandura, 1986, p. 335). However, people who are skeptical of their ability to exercise control over their behavior tend to undermine their own efforts to deal effectively with situations that tax or challenge their capabilities (Bandura , 1986).

The lack or absence of self-regulated performance is *procrastination*, the tendency to put off or completely avoid an activity under one's control (Tuckman and Sexton, 1989b). It has been proposed that procrastination results from a combination of (1) disbelieving in one's own capability to perform a task (Bandura, 1986), (2) being unable to postpone gratification, and (3) assigning blame for one's own "predicament" to external sources (Ellis and Knaus, 1977; Tuckman, 1989).

As one proceeds through school, the responsibility for control of one's own performance shifts progressively from parents and teachers to oneself, reaching a high point during the college years. The inability to overcome procrastination tendencies causes problems for many college students, leading researchers to be on the lookout

for effective strategies that may be used to help such students regulate their own learning (see, for example, Zimmerman, 1989). Being able to accurately measure and predict the tendency to procrastinate would be quite useful in (1) helping those students who have that tendency to overcome it before it overcomes them, and (2) providing researchers with an individual measure to assess and control for *a priori* motivational differences in studies evaluating the effects of instructional or motivational interventions.

Accordingly, the purpose of the present study was(1) to develop a self-report measure of procrastination tendencies, and (2) to test this measure by first, relating it to a behavioral measure of self-regulated performance, and second, by relating it to a self-report measure of self-efficacy or the degree to which one believes in one's own capability to perform (Bandura, 1986).

METHOD

The *Procrastination Scale* was developed using the following procedure. A set of 72 Likert items was written covering the following topics: (1) general self-description of the tendency to delay or put off doing things (e.g., *When I have a deadline, I wait till the last minute*); (2) tendency to have difficulty doing unpleasant things and, when possible, to avoid or circumvent the unpleasantness (e.g., *I look for a loophole or a shortcut to get through a tough task*); (3) tendency to blame others for one's own plight (e.g., *I believe that other people do not have the right to give me deadlines*). The presumable self-doubt or self-inefficacy aspect of procrastination was not included since it is covered by other measures such as the *General Self-Efficacy Scale* used in this study (see below).

The resulting 72-item scale with four response choices per item (i.e., *that's me for sure, that's my tendency, that's not my tendency, that's not me for sure*) was administered to 50 college students, juniors and seniors between the ages of 19 and 22, who were preparing to become teachers. The item results were factor analyzed using the principal component solution and orthogonal rotation in an effort to produce a shorter version of the scale with a coherent internal structure and an adequate reliability.

Twelve weeks prior to completion of the *Procrastination Scale*, Ss completed the *General Self-Efficacy Scale* (Scherer, Maddux at al., 1982). This is a set of 17 self-descriptive items embedded in a total test of 30 items (including filler items and items measuring social self-efficacy) with responses provided on a 5-point Likert Scale. Only the responses to the 17 general self-efficacy items were used. These included such items as: *Failure just makes me try harder*, and *I feel insecure about my ability to do things*. Overall, the general self-efficacy items measure beliefs people have about their ability to overcome obstacles and succeed.

The behavioral measure of self-regulated performance obtained from the 50 Ss came from their participation in a task called VHS or Voluntary Homework System (Tuckman and Sexton, 1989a, b). This task was part of a regular Educational Psychology course in which students were offered the opportunity to write and submit up to 25 test items per week for 10 weeks covering the weekly course topics in an effort to gain extra course credit toward their grade. Item types of any one of three levels of difficulty (completion, multiple choice-knowledge, or multiple choice-comprehension) could be written for one, two, or three points respectively per item. Students who ended up in the top third in total points got a double-notch bonus (e.g., a B became an

A-), students in the middle third got a single-notch bonus (e.g., a B became a B+), and students in the low third got no bonus. Results presented by Tuckman and Sexton (1989b) suggest that performance on the VHS task may be considered a reflection of inherent procrastination tendencies. Hence, total VHS points were used as a behavioral measure of procrastination (or, actually, of its antithesis).

Reliability coefficients using Cronbach's alpha were computed for both the *Procrastination Scale* (as reconstituted after the factor analysis) and the *General Self-Efficacy Scale*, and results on the two tests were correlated to determine their degree of interrelationship. Scores on each test were also correlated with performance points earned on the VHS task. However, since the points measure on the VHS task tended to be trimodally rather than normally distributed (owing to the three bonus categories), rank-order correlations were computed rather than parametric correlations.

Scores on the 35-item *Procrastination Scale* were then subjected to an additional procedure to provide further refinement of the measure. The *Scale* was readministered to a new sample of 183 Ss drawn from the same population as the original 50, and scores on the 35 items were factor analyzed again. The same factor analytic technique was employed as was used originally to see if the same factor structure would be obtained.

RESULTS

The 50 scores on the original 75-item version of the scale were normally distributed with a median of 89 representing a score of 2.5 on the 4-point Likert scale. That score of 2.5 is exactly at the middle of the scale, indicating that students were not

reacting to social desirability considerations and biasing their responses more in one direction than the other. Scores on the *General Self-Efficacy Scale* had a median of 62 or a median scale score of 3.6 on the 5-point Likert scale. Since 3.0 is at the middle of a 5-point scale, scores on this scale can be considered somewhat biased toward the high end.

Regarding the first factor analysis of the (75-item) *Procrastination Scale*, 10 factors were extracted before communalities exceeded one but only two factors by themselves each accounted for 10% or more of the common variance. The first factor, accounting for 25% of the variance, seemed to include the general description of oneself as a procrastinator or time waster and delayer, along with the tendency to avoid unpleasant tasks. The second factor, accounting for 11% of the variance, seemed to include the idea of the externalization of blame for one's unpleasant tasks. Using a factor loading of .45 as a minimum requirement for inclusion, a 35-item scale was created from the original 72 with about three-quarters of the items representing the first factor and one-quarter representing the second factor. A list of the 35 items appears in Figure 1.

Insert Figure 1 about here

Regarding reliability, the 35-item *Procrastination Scale* had an alpha reliability coefficient of .90 while the 17-item *General Self-Efficacy Scale* had an alpha reliability of .77. The Spearman rank-order correlation between scores on the two scales was -.47 indicating a moderately high degree of overlap.

The rank-order correlation between *Procrastination Scale* score and performance

points on the VHS task was -.54 while the rank-order correlation between scores on the *General Self-Efficacy Test* and VHS performance points was .29. Hence, the relationship between self-reported procrastination tendency and actual self-regulated performance was a strong one, almost twice that between self-reported self-efficacy and self-regulated performance.

The second factor analysis on a sample of 183 responses to the 35-item version of the *Procrastination Scale* (in contrast to the orginal 50 esponses) yielded a much better one-factor solution than a two-factor solution since only one factor had an eigenvalue much above one. (The first factor had an eigenvalue of 5.32 and accounted for almost 30% of the variance.) Of the 35 items, 16 had loadings of .30 or higher on this factor. The computed reliability (Cronbach's alpha) for the resulting 16-item scale was .86. The 16 items that loaded on this first strong factor are marked with an asterisk in Figure 1.

DISCUSSION

The findings showed that scores on the 35-item *Procrastination Scale* were significantly related to both scores on the *General Self-Efficacy Scale* and to scores on a behavioral measure of self-regulated performance (with the second relationship being slightly more substantial than the first). In other words, those students who described themselves as time wasters, deadline avoiders, pleasure seekers, and blamers and resenters of others who made demands on their time also tended to (1) describe themselves as people who doubted their own capability to perform, and (2) actually perform less or expend less effort in a voluntary task which could provide them with a needed bonus in their course grade (in comparison to other students who

described themselves as being less inclined to procrastinate).

In addition, scores on this scale showed very high reliability suggesting that students are well aware of their own tendencies and can report them with great accuracy.

Thus, the *Procrastination Scale* appears to be a valid and reliable measure of the tendency to waste time, delay, and intentionally put off something that should be done. As such, it has the potential to be an accurate predictor and detector of the inclination to procrastinate, that unfortunate and counterproductive tendency in college students. Moreover, it is bears a considerably stronger relationship to self-regulated performance than a general measure of beliefs in one's own level of self-efficacy.

The *Procrastination Scale* can be administered in its short, 16-item version without any substantial sacrifice in reliability. Being able to determine the tendency of specific college students to procrastinate early in their college careers or at the start of a course would make it possible to provide them with appropriate counseling and other assistance to better succeed in college or in that course. Being able to determine this tendency will also provide those testing the impact of different instructional interventions or programs with a way of accounting for those students for whom it may not work because they do not participate actively in it. In other words, the measure can also be used to measure a control variable or covariate to account for variance in self-regulated performance other than that produced by a treatment intended to enhance classroom performance.

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Figure 1. The Procrastination Scale

A. That's me for sure	B. That's my tendency	C. That's not my tendency	D. That's not me for sure

* 1. I needlessly delay finishing jobs, even when they're important.
* 2. I postpone starting in on things I don't like to do.
3. When I have a deadine, I wait till the last minute.
* 4. I delay making tough decisions.
5. I stall on initiating new activities.
^6. I'm on time for appointments.
* 7. I keep putting off improving my work habits.
* 8. I get right to work, even on life's unpleasant chores.
* 9. I manage to find an excuse for not doing something
10. I avoid doing those things which I expect to do poorly.
*11. I put the necessary time into even boring tasks, like studying.
12. When I get tired of an unpleasant job, I stop.
13. I believe in "keeping my nose to the grindstone."
*14. When something's not worth the trouble, I stop.
15. I believe that things I do not like doing should not exist.
16. I consider people who make me do unfair and difficult things to be rotten.
17. When it counts, I can manage to enjoy even studying.
*18. I am an incurable time waster.
19. I feel that it's my absolute right to have other people treat me fairly.
20. I believe that other people don't have the right to give me deadlines.
21. Studying makes me feel entirely miserable.
*22. I'm a time waster now but I can't seem to do anything about it.
23. When something's too tough to tackle, I believe in postponing it.
24. I promise myself I'll do something and then drag my feet.
25. Whenever I make a plan of action, I follow it.
*26. I wish I could find an easy way to get myself moving.
^27. When I have trouble with a task, it's usually my own fault.
28. Even though I hate myself if I don't get started, it doesn't get me going.
*29. I always finish important jobs with time to spare.
*30. When I'm done with my work, I check it over.
*31. I look for a loophole or shortcut to get through a tough task.
*32. I still get stuck in neutral even though I know how important it is to get started.
33. I never met a job I couldn't "lick."
*34. Putting something off until tomorrow is not the way I do it.
35. I feel that work burns me out.

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* 16 best items based on the second factor analysis.
^ Ambiguous item; should be deleted.